REMARKS

Introductory Comments

As of the mailing date of the 10/19/2009 Office Action, claims 1-26 were pending in the present application. In the present amendment, claims 3 and 22 have been canceled without prejudice, and claims 1, 14, 19, and 21 have been amended, leaving claims 1, 2, 4-21, and 23-26 for consideration upon entry of the present Amendment. The claims have been amended as explained below. Reconsideration and allowance of the claims is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Amendments

Claims 3 and 22 have been canceled without prejudice.

Claim 1 has been amended to add the limitation, "wherein the fibre material is a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material". Support for this limitation can be found, at least, in claim 3 as filed.

Claims 14 and 21 have been amended to delete narrow ranges where broad ranges are already stated.

Claim 19 has been amended to add the limitation, "wherein the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1". Support for this limitation can be found, at least, in claim 22 as filed.

Applicants are not conceding in this application that the canceled claims are not patentable over the art cited by the Examiner. Nor are Applicants conceding that the amended claims would not have been patentable without the current amendments. The present claim cancellations and amendments are intended only to facilitate expeditious allowance of valuable subject matter. Applicants respectfully reserve the right to present and prosecute the original versions of canceled and amended claims in one or more continuing applications.

Indefiniteness Rejections

Claims 14, 21, and 22 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. 10/19/2009 Office Action, page 2, paragraph no. 2. In particular, the Office Action notes that

> A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c).

10/19/2009 Office Action, page 2, paragraph no. 3.

The rejection of claim 22 is moot in view of its present cancellation. Applicants have amended claims 14 and 21 to delete the narrow ranges while preserving the broad ranges. In view of these amendments, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 14 and 21 under 35 U.S.C. § 112, second paragraph.

Anticipation Rejections over Maeda

Claims 1-5, 11-12, 14-16, and 19-25 stand rejected under 35 U.S.C. § 102(e) as anticipated by Maeda et al., USP 6,780,832. 10/19/2009 Office Action, page 4, paragraph no. 9. The rejections of claims 3 and 22 are moot in view of their present cancellations. Applicants respectfully traverse the rejections of claims 1, 2, 4, 5, 11-12, 14-16, 19-21, and 23-25 to the extent they may be applicable to the claims as currently amended.

U.S. Patent No. 6,780,832 to Maeda (hereinafter "Maeda") generally describes a water-soluble polymer allegedly exhibiting a high calcium-ion-scavenging function and a high clay-dispersing function even in high-hardness water. Maeda abstract. Maeda also discloses a detergent composition comprising the water-soluble polymer, and other uses of the water-soluble polymer. *Id.* The water-soluble polymer preferably includes polymers A and B as essential components wherein the polymer A has a calcium ion

scavenge ability of not less than 0.45 and wherein the polymer B has a clay dispersibility of not less than 0.65 in high-hardness water. *Id.* Maeda's water-soluble polymer can be used as part of a fiber-treating agent. Maeda, column 13, lines 57-60; column 14, line 47 to column 15, line 40. Maeda's fiber-treating agent can be used on fibers including "cellulose fibers such as cotton and hemp; chemical fibers such as nylon and polyester; animal fibers such as wool and silk; semisynthetic fibers such as rayon; and any fabric and blend thereof". Maeda, column 15, lines 25-30.

Applicants respectfully assert that claims 1, 2, 4, 5, 11-12, 14-16, 19-21, and 23-25 are not anticipated by Maeda because Maeda does not teach the fiber material of claim 1, nor does Maeda teach the polymer to chelating agent weight ratio of independent claim 19.

Anticipation requires that all of the limitations of the claim be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991).

Claims 1 and 19 are the only currently pending independent claims.

Claim 1 as currently amended includes the limitation, "wherein the fibre material is a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material". The Office Action argues that Maeda teaches a chemical fiber at column 15, line 28. 10/19/2009 Office Action, page 4, paragraph no. 12. Applicants do not dispute that the cited line of Maeda refers to "chemical fibers such as nylon and polyester". However, this teaching does not satisfy the quoted claim limitation because Maeda's "chemical fibers such as nylon and polyester" do not constitute a "chemical . . . pulp". Accordingly, the Office has not established that Maeda teaches the claim 1 limitation, "wherein the fibre material is a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material", and Maeda therefore fails to anticipate claim 1.

Independent claim 19 as currently amended includes the limitation, "wherein the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1". With respect to this limitation, which was originally recited in claims 14 and 22, the Office Action states,

> Maeda teaches a weight ratio of the polymer to the chelating agent that is .01:1-100:1 (column 15 1ine 14), Which encompasses the claimed range of 1:4 to 4:1. Additionally, Example 2 teaches the addition of 0.15 g of zeolite (a chelating agent, column 21 line 62) in a pot with 5g of a 1% aqueous polymer solution (column 21 line 64). The ratio of chelating agent to polymer solution would then be 0.03:1 and the ratio of chelating agent to just the polymer (taking the 1 % dilution into consideration) would be 3:1, which reads on the claimed limitations.

10/19/2009 Office Action, page 5, paragraph no. 15. Applicants respectfully disagree with the Office's characterization of Maeda. The cited passage encompassing Maeda column 15, line 14 states, in relevant part, "it is preferable to use as the fiber-treating agent a composition which contains the at least one member selected from the group consisting of dyeing agents, peroxides, and surfactants in a ratio of 0.1 to 100 weight parts per 1 weight part of the water-soluble polymer". Maeda, column 15, lines 11-15. Contrary to the Office's assertion, this passage makes no mention of chelating agents and is therefore irrelevant to the quoted claim 19 limitation. The cited passage encompassing Maeda column 21, line 62 merely refers to "0.15 g of zeolite". Maeda, column 21, lines 62-63. This passage does not characterize zeolite as a chelating agent, nor does any other passage of Maeda. See, especially, Maeda, column 13, lines 37-43 (listing zeolite among other "components conventionally used for detergent compositions" and separate from "chelate builders"); and column 13, lines 44-51 (listing chelate builders, not one of which bears any chemical resemblance to zeolite). Accordingly, the Office has not established that Maeda teaches the claim 19 limitation, "wherein the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1", and Maeda therefore fails to anticipate claim 19.

Claims 1 and 19 thus are not anticipated by Maeda. Given that claims 2, 4, 5, 11-12, 14-16, 20, 21, and 23-25 each depend from or further limit one of claims 1 and 19, they too are not anticipated by Maeda. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 1, 2, 4, 5, 11-12, 14-16, 19-21, and 23-25 under 35 U.S.C. § 102(e) over Maeda.

Anticipation Rejections over Yamaguchi

Claims 1, 4-6, 10, 19, and 25-26 stand rejected under 35 U.S.C. § 102(e) as anticipated by Yamaguchi et al., USP 5,135,677. 10/19/2009 Office Action, page 6, paragraph no. 19. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as currently amended.

U.S. Patent No. 5,135,677 to Yamaguchi et al. (hereinafter "Yamaguchi"), generally describes a process for producing an acid-type polymaleic acid and acid-type maleic acid copolymer and also to the usage of the acid-type polymaleic acid and acid-type maleic acid copolymer produced by the process. Yamaguchi abstract.

Applicants respectfully assert that claims 1, 4-6, 10, 19, 25, and 26 are not anticipated by Yamaguchi because Yamaguchi does not teach a composition comprising a chelating agent and a polymer of claim 1 and 19 formula I, nor does Yamaguchi teach the treatment of a fibre material with such a combination.

Anticipation requires that all of the limitations of the claim be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991).

The Office Action states,

> Regarding claims 1 and 19, Yamaguchi teaches a process for the treatment of a fiber material (teaches the use of a solution for pulp bleaching, column 9 lines 25-27) comprising contacting the fiber material in an aqueous medium (column 9 lines 12-22) with a chelating agent (Yamaguchi teaches adding both a metal ion and a chelating agent with the polymer column 6 line 32 – column 7 line 18) and a polymer having the provided general formula [Polymer A = maleic acid, column 6 line 9, Polymer B = 3-allyloxy-2-hydroxypropanesulfonic acid, column 6 line 18] where the monomers are in a ratio of n (Polymer A) is 0-.95, m (Polymer B) is 0.05-.9, and k (optional component) is 0-.8, wherein n+m+k = 1 (ratio of A/B is 50:50 to 99.9:0.01, column 6 lines 21-31), and wherein the weight average molecular weight is between 500 and 20,000,000 g/mol (300-5000, claim 1).

10/19/2009 Office Action, page 6, paragraph no. 20. Applicants respectfully disagree with the Office's assertion that Yamaguchi teaches a composition comprising a chelating agent and a polymer of claim 1 and 19 formula I. In particular, Yamaguchi's only use of a chelating agent is in the synthesis of the acid-type maleic acid copolymer. Yamaguchi, column 6, line 21 to column 7, line 18 (process in general), specifically column 7, lines 6-18 (use of "chelating agent" in process). In this synthesis, the chelating agent is used in conjunction with a metal ion that is present at a concentration, most broadly, of 0.1-500 ppm relative to the monomer composition. Yamaguchi, column 6, lines 39-41 (metal ion concentration); column 7, lines 6-8 (use of metal ion in combination with chelating agent). Thus, a skilled person would use the Yamaguchi's chelating agent at a concentration comparable to Yamaguchi's 0.1-500 ppm metal ion concentration. This is further illustrated by Example 81, where the chelating agent 1-hydroxyethylidene-1,1-diphosphonic acid is used at a concentration of 22.5 parts per million relative to total monomer ($10^6 \times 0.005/(196+26)$). Such a chelating agent concentration of at most 500 parts per million per one part copolymer is far outside Applicants' polymer to chelating agent ratio of 1:4 to 4:1. So, Yamaguchi does not teach the claim 1 "treatment of a fibre material" with a composition comprising a chelating agent and a formula I polymer. And Yamaguchi also does not teach the use of a composition "wherein the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1" as required by claim 19.

Yamaguchi therefore fails to anticipate independent claims 1 and 19. Claims 4-6, 10, 25, and 26, which each depend from and further limit claim 1, are also not anticipated by Yamaguchi. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 1, 4-6, 10, 19, 25, and 26 under 35 U.S.C. § 102(e) over Yamaguchi.

Obviousness Rejections over Maeda

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Maeda. 10/19/2009 Office Action, page 8, paragraph no. 26. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as currently amended.

Maeda is described above.

Applicants respectfully assert that claims 17 and 18 are patentable over Maeda because Maeda does not teach or suggest treatment of a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a *prima facie* case of obviousness requires that all limitations of the claim be taught or suggested by the prior art. *See, e.g., CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka,* 490 F.2d 981, 985 (C.C.P.A. 1974).

Claims 17 and 18 each depend directly from and further limit claim 1. Claim 1 is directed to a process for treatment of a fibre material, "wherein the fibre material is a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material". As discussed above in the context of the anticipation rejections over Maeda, Maeda does not teach or suggest this limitation. Accordingly, Maeda does not support a *prima facie* case of obviousness against claims 17 and 18. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 17 and 18 under 35 U.S.C. § 103(a) over Maeda.

Obviousness Rejections over Yamaguchi

Claims 7-9 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yamaguchi. 10/19/2009 Office Action, page 9, paragraph no. 30. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as currently amended.

Yamaguchi is described above.

Applicants respectfully assert that claims 7-9 are patentable over Yamaguchi because Yamaguchi does not teach or suggest the claim 1 "treatment of a fibre material" with a composition comprising a chelating agent and a formula I polymer.

Claims 7-9 each depend ultimately from and further limit claim 1. Claims 7-9 therefore incorporate the claim 1 requirement to treat a fibre material with a composition comprising a chelating agent and a formula I polymer. As described above in the context of the anticipation rejections over Yamaguchi, Yamaguchi does not teach or suggest treating a fibre material with a composition comprising a chelating agent and a formula I polymer. Yamaguchi's only use of a chelating agent is in the synthesis of the acid-type maleic acid copolymer. Yamaguchi therefore fails to support a *prima facie* case of obviousness against claims 7-9. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 7-9 under 35 U.S.C. § 103(a) over Yamaguchi.

Obviousness Rejections over Maeda + Andersson

Claims 7 and 13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Maeda in view of Andersson et al., USP 5,658,429. 10/19/2009 Office Action, page 10, paragraph no. 35. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as currently amended.

Maeda is described above.

U.S. Patent No. 5,658,429 to Andersson et al. (hereinafter "Andersson") generally describes a process for delignification and bleaching of chemically digested lignocellulose-containing pulp, where the pulp is treated with a complexing agent at a pH between 3.1 and 9.0, whereupon the pulp is bleached with ozone. Andersson abstract.

Applicants respectfully assert that claims 7 and 13 are patentable over Maeda and Andersson because a skilled person would not modify Maeda according to Andersson, and because even if the proposed modification were made, it would not yield the inventions of claims 7 and 13.

The Supreme Court has recently reaffirmed the principle that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art". *KSR Int'l. Co. v. Teleflex Inc.,* 127 S.Ct. 1727, 1741 (2007). The Court further stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does". *Id.* Furthermore, while the *KSR* decision may have eliminated any rigid requirement for application of the teaching-suggestion-motivation test (TSM test), it did not disturb the longstanding principle that "a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)." MPEP 2141.02 (emphasis in original).

Claims 7 and 13 are patentable over Maeda and Andersson because a skilled person would not modify Maeda according to Andersson. Claims 7 and 13 each depend ultimately from and further limit claim 1. As described above in the context of the anticipation rejections over Maeda, claim 1 as currently amended includes the limitation, "wherein the fibre material is a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material", and Maeda does not teach this limitation. Andersson describes a process for delignification and bleaching of chemically digested lignocellulose-containing pulp. Because there is no compositional overlap between the fibers of Maeda and the "chemically digested lignocellulose-containing pulp" of Andersson, a skilled person would not select processing conditions from Anderson to utilize in the process of Maeda. Specifically, a skilled person would have no reason, let alone a sufficient reason, to select Andersson's preferred pH range of 5 to 7 (column 2, lines 33-34) or Andersson's complexing agent amount of 0.5 to 5 kilograms/ton of dry pulp (column 3, lines 39-40) for use in the process of Maeda. In short, the cited references collectively fail to provide a reason for a skilled person to have made the proposed modifications. For this reason alone, a *prima facie* case of obviousness has not been established.

And even if there were a reason for a skilled person to have made the proposed modifications, those modifications would not yield the inventions of claims 7 and 13. Specifically, the proposed modifications would yield the Maeda process conducted at a pH of 5 to 7, and the Maeda process conducted using a complexing agent amount of 0.5 to 5 kilograms/ton of dry fiber. In either case, the modified Maeda process would be treating the fibers disclosed in Maeda. Conversely, the modified Maeda process would not be treating "a cellulosic fibre material comprising a chemical, mechanical or chemi-mechanical pulp or a recycled fibre material" as required by claims 7 and 13. For this reason alone, the cited references fail to support a *prima facie* case of obviousness against claims 7 and 13.

For either and both of the above reasons, the proposed modification of Maeda according to Andersson does not support a *prima facie* case of obviousness against claims 7 and 13. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 7 and 13 under 35 U.S.C. § 103(a) over Maeda in view of Andersson.

Provisional Nonstatutory Double Patenting Rejections

Claims 1-26 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 13-28, 7-8, 1-6, and 22 of copending Application No. 11/596140. 10/19/2009 Office Action, page 11, paragraph no. 40.

Applicants thank the Examiner for pointing out the potential obviousness-type double patenting issue between the claims of the present application and those of copending application No. 11/596140. In view of the present claim amendments and the possibility that claims in the cited application or the present application will be further amended before allowance, Applicants will defer responding to this provisional rejection until claims in the reference application are allowed, claims in the present application are otherwise allowable, and it is determined whether this provisional rejection becomes an actual rejection.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is respectfully requested.

It is believed that all the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' Attorneys.

Respectfully submitted,

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